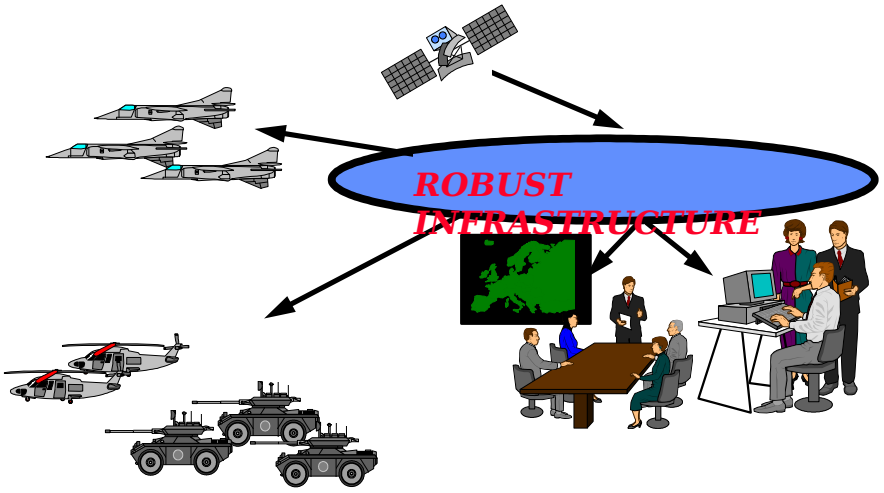
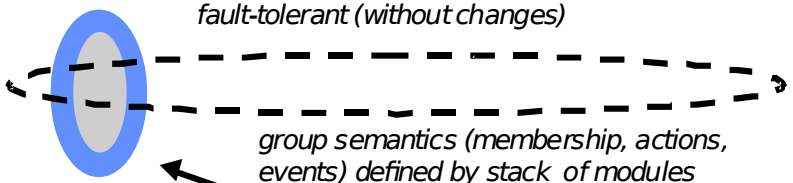
Secure Real-Time Multicast: The Ensemble System

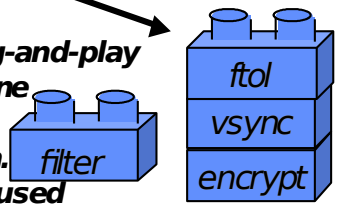


Network or application wrapped to transparently introduce security or to make critical services fault-tolerant (without changes)



group semantics (membership, actions, events) defined by stack of modules

Composable plug-and-play modules determine properties of the hardened system. Formal methods used to validate implementation



ENSEMBLE

fault-tolerance... security... verified properties

Tools for Critical C4I Applications

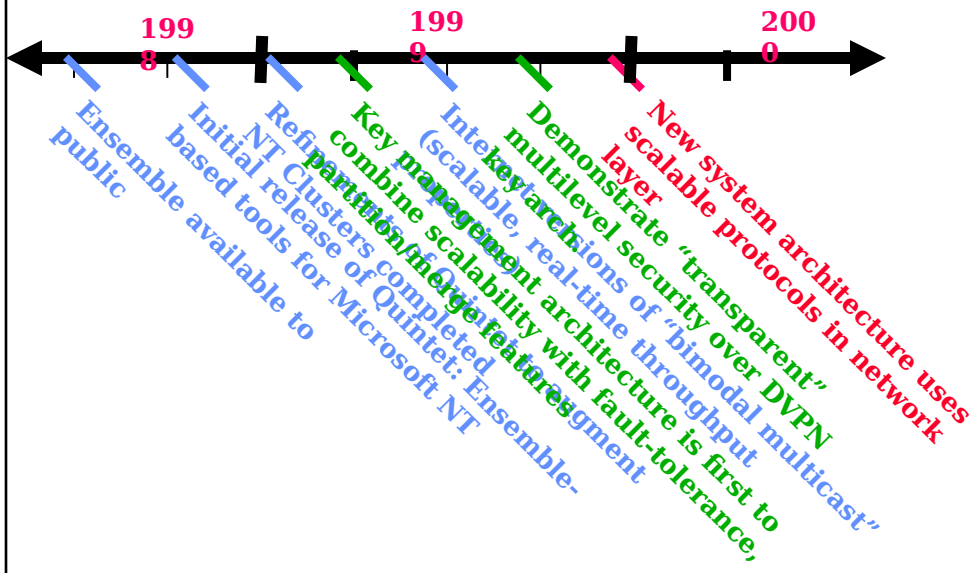
ENSEMBLE IMPACT

* **High performance, fault-tolerant protocols, with real-time properties both in cluster-computing settings and in scalable configurations.**

* **Includes group-key management protocols for information security. Ours is 1st scalable group key management protocol to offer fault-tolerance, network partition/remerge mechanisms, yet cost remains low.**

* **Clean integration into vendor standards, major role in Quoin and Navy's SC-21 standard.**

* **New generation of probabilistic quality of service protocols offer unique mixture of scalability and reliability. Now developing Spinglass, a new system based on this approach**



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